UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,307	04/04/2005	Janardhana Bhat	SG 020026	9932

24737 7590 04/13/2009
PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER	
LEE, SIU M	

ART UNIT	PAPER NUMBER
2611	

MAIL DATE	DELIVERY MODE
04/13/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,307	BHAT ET AL.	
	Examiner	Art Unit	
	SIU M. LEE	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,6,8-14 and 17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *6* is/are allowed.

6)☒ Claim(s) *1-3,8,13,14 and 17* is/are rejected.

7)☐ Claim(s) *9-12* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 February 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-3, 6, 8-14, and 17 have been considered but are moot in view of the new ground(s) of rejection because of the amendment.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 8, 13, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US 6,831,705 B2) in view of Kenny et al. (US 6,009,129).

(1) Regarding claim 1:

Yamamoto discloses a method for automatically setting an operative state of a wideband amplifier (high gain RF amplifier 31 in figure 1) in a multi-channel television receiver, the method comprising the step of:

measuring at least one signal quality parameter (the detector 18 in figure 1 detected the IF signal level); and

deciding to switch the amplifier either to its ON state (active state) or to its OFF state (inactive state) on the basis of the measured parameter (microcomputer 22 determines whether or not the RF signal detected by the detector 18 is at a predetermined level or greater, if the signal is at the predetermined level or greater, the microcomputer 22 stores the channel frequency of the television radio wave tuned by the tuning operation, when the RF signal detected by the detector 18 is not at the predetermined level or greater, the microcomputer turns on the booster 31 by switching the contact point 28 to the input terminal of the high gain RF amplifier 31 using the switch 29, and turn on the flag indicating the operation state of the switch circuit 29, column 6, line 67 - column 7, line 13), wherein the step of deciding to switch the amplifier to its ON state (active state) is exclusively taken during at least one time interval when the receiver is switched to a channel, or during activation of the multi-channel television receiver, or during an installation process when all channels are scanned (the above process happen during the automatic channel preset mode, column 6, line 52).

Yamamoto describes a method wherein the measuring step includes measuring the improvement in signal quality when the amplifier is turn on. Yamamoto fails to disclose a measuring step that includes measuring the improvement in signal quality when the amplifier is turn off.

However, Kenny et al. teaches a method that determine the present of intermodulation distortion in an amplified signal and when intermodulation distortion

exist, the amplifier is being turned off (bypass) (LNA 305 is bypass when switch 303 and 304 are on as shown in figure 3) (column 6, lines 46-50 and column 7, lines 53-65).

It is desirable to have a measuring step that includes measuring the improvement in signal quality when the amplifier is turn off because it can prevent intermodulation distortion in the received signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teaching of Kenny et al. in the method of Yamamoto and measure the level of distortion and signal level to determine whether the amplifier should be bypassed in order to optimize the integrity of the received signal.

(2) Regarding claim 8:

Yamamoto further discloses wherein the step of deciding to switch the amplifier comprises the steps of:

a) switching the amplifier to its OFF state (inactive state) (step S26 for figure 4, turn off booster (high gain RF amplifier 31 of figure 1), column 6, lines 52-59);

b) measuring a value S_{lp}(LNA--OFF) of said at least one signal quality parameter while the amplifier is maintained in its OFF state (detector 18 of figure 1 detect the RF signal level, column 6, lines 66-67);

c) comparing the measured value (SIp(LNA=OFF)) with a predetermined decision level (step S34 of figure 4, compare the RF signal level to a predetermined level, column 6, line 66 – column 7, line 1);

d) if the comparison indicates good signal conditions, deciding to keep the amplifier operating in its OFF state (if the RF signal is at the predetermined level or

greater, the process goes to step S38 and the booster will remain off as shown in figure 4).

(3) Regarding claim 13:

Yamamoto further discloses wherein the step of measuring at least one signal quality parameter comprises:

the step of measuring signal conditions of all available channels and the steps of measuring; and deciding to switch are taken exclusively during an initializing procedure of the receiver (the examiner interprets the automatic channel preset mode as an initializing procedure of the receiver, column 6, lies 52-53) (figure 4, during automatic channel preset, each channel is tune by turn off the booster (S26) and measure the RF signal is at predetermined level (S34), if the RF signal is at the predetermined level or greater, the microcomputer 22 stores the channel frequency of the television radio wave tuned by the tuning operation and the state of the flag; if the RF signal is not at the predetermined level, the microcomputer 22 tune on the booster 31 by and tune the channel, column 6, line 52 – column 7, line 13).

(4) Regarding claim 17:

Yamamoto discloses a multi-channel television receiver comprising:

an input for receiving a wideband signal potentially comprising multiple channels (the antenna 11 of the television receiver as shown in figure 1, since it is a television receiver, therefore, it is inherently receiving a wideband signal potentially comprising multiple channel, column 5, lines 24-26);

a tuner stage (tuner RF amplifier 12) (in review of the instant application, the instant application only discloses that the tuner comprises the wideband RF amplifier 115, therefore, the examiner interprets the RF amplifier 12 of Yamamoto as the tuner stage);

a wideband amplifier connected between said input and said tuner (high gain amplifier 31 is connected between said input (antenna 11) and said tuner (RF amplifier 12) as shown in figure 1);

a controllable switch bridging said amplifier (switch circuit 28 is controllable to connect the antenna input to the high gain amplifier 31 or bypass the high gain amplifier 31 and directly connect the antenna input to the RF amplifier 12 as shown in figure 1, column 5, line 63 – column 6, line 11);

a switch controller (microcomputer 22) designed to generate a switch control signal (BSC) (the switch circuit 29 controls the switch circuit 28 depending on the control from the microcomputer 22, column 5, lines 29-32);

wherein the switch controller (microcomputer 22) is designed to measure at least one signal quality parameter (the microcomputer 22 determines whether or not the RF signal detected by the detector 18 is at a predetermined level or greater, column 6, line 66 – column 7, line 1) and to generate its switch control signal (BSC) on the basis of the measured parameter (if the RF signal is at the predetermined level or greater, the microcomputer 22 stores the channel frequency of the television and if the RF signal detected by the detector 18 is not at the predetermined level or greater, the microcomputer 22 turns on the booster 31 by switching the contact point 28 to the input

of the high gain RF amplifier 31 using the switch 29, column 7, lines 1-4 and 9-14); and wherein the switch controller is designed to switch the switch from its closed state (amplifier inactive) (bypassing high gain amplifier 31) to its open state (amplifier active) (connecting the high gain amplifier 31 to contact point 28) exclusively during at least one time interval when a channel is selected (column 6, line 52 - column 7, line 14 describes the automatic channel preset mode when a channel is selected).

Yamamoto describes a method wherein the measuring step includes measuring the improvement in signal quality when the amplifier is turn on. Yamamoto fails to disclose a measuring step that includes measuring the improvement in signal quality when the amplifier is turn off.

However, Kenny et al. teaches a method that determine the present of intermodulation distortion in an amplified signal and when intermodulation distortion exist, the amplifier is being turned off (bypass) (LNA 305 is bypass when switch 303 and 304 are on as shown in figure 3) (column 6, lines 46-50 and column 7, lines 53-65).

It is desirable to have a measuring step that includes measuring the improvement in signal quality when the amplifier is turn off because it can prevent intermodulation distortion in the received signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the teaching of Kenny et al. in the method of Yamamoto and measure the level of distortion and signal level to determine whether the amplifier should be bypassed in order to optimize the integrity of the received signal.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US 6,831,705 B2) in view of Kenny et al. (US 6,009,129) as applied to claim 1 and further in view of Hutchison IV et al. (US 5,722,061).

Yamamoto and Kenny et al. disclose all the subject matter as discussed in claim 1 except the method comprises the steps of (a) remeasuring said signal quality parameter; (b) deciding, on the basis of the remeasured parameter, to either maintain the amplifier in its ON state or to switch the amplifier to its OFF state.

However, Hutchison IV et al. discloses a method comprising the steps of (a) remeasuring said signal quality parameter (step 1702 turn on the LNA amplifier and then measure the power of the received signal, column 9, line 65 – column 10, lines 2); (b) deciding, on the basis of the remeasured parameter, to either maintain the amplifier in its ON state or to switch the amplifier to its OFF state (decision step 1704 in figure 17, it is determined whether the receive power is greater than a disable threshold, if the receive power is not greater than the disable threshold, then the process return to block 1702, column 10, lines 1-5).

It is desirable to remeasuring said signal quality parameter and deciding, on the basis of the remeasured parameter, to either maintain the amplifier I its ON state or to switch the amplifier to its OFF state because by constantly monitoring the parameter, it compensates for the changing channel. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Hutchison IV et al. in the method of Yamamoto and Kenny et al. to prevent the received signal being distorted.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US 6,831,705 B2) in view of Kenny et al. (US 6,009,129) as applied to claim 1 and further in view of Albicker (US 7,274,918 B1).

Yamamoto and Kenny et al. disclose all the subject matter as discussed in claim 1 except wherein the step of measuring at least one signal quality parameter comprises the step of measuring intermodulation product or a noise-related signal or determining whether an automatic gain control system of the receiver is active or inactive.

However, Albicker discloses wherein the step of measuring at least one signal quality parameter comprises the step of measuring intermodulation products (the examiner interpret intermodulation product as the interference from a neighbor channel) (the tuner measures the signal strength at a certain channel frequency, and an adjacent frequencies to the certain channel frequency, if there is signal energy indicative of noise at the adjacent frequencies, a noise value is subtracted from the measured signal strength of the first desired frequency to provide a corrected measured signal strength value, which is compared against a threshold to determine if valid audio data is present at the first desired frequency, column 1, lines 40-50).

It is desirable to measuring at least one signal quality parameter comprises the step of measuring intermodulation product because it considers the strength of the interference and noise as part of the quality of signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching

of Albicker in the method of Yamamoto and Kenny et al. to improve the estimation of quality of the channel.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto (US 6,831,705 B2) in view of Kenny et al. (US 6,009,129) as applied to claim 13 and further in view of Schreiber et al. (US 5,010,405).

Yamamoto and Kenny et al. disclose all subject matter as discussed in claim 13 and further disclose wherein the at least one signal quality parameter comprises a signal strength of each of the available channels (step S34 in figure 4, column 6, line 52 – column 7, line 13); except wherein the at least one signal quality parameter comprises a signal-to-noise ratio of each of the available channels.

However, Schreiber et al. teaches a method to measure the signal to noise ratio as a part of the signal quality (column 10, liens 51-58).

It is desirable to include the signal to noise ratio of each channel as a part of the signal quality parameter because it considers the strength of the interference and noise as part of the quality of signal. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to employ the teaching of Schreiber et al. in the method of Yamamoto and Kenny et al. to improve the estimation of quality of the channel.

Allowable Subject Matter

7. Claim 6 is allowed.

8. Claims 9-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

Claim 6 describes a method for automatically setting an operative state of a wideband amplifier in a multi-channel receiver, the method comprising the steps of measuring at least one signal quality parameter; and deciding to switch the amplifier either to its ON state (active state) or to its OFF state inactive state) on the basis of the measured parameter, wherein the step of deciding to switch the amplifier to its ON state (active state) is taken during at least one time interval when the receiver is switched to a channel wherein measuring that at least one signal quality parameter includes determining whether a DC voltage level of an automatic gain control signal (AGC2) has a first value indicating that the automatic gain control system is inactive, or has a value within a predetermined range indicating that the automatic gain control system is active. The closest prior art, Yamamoto (US 6,831,705 B2) in view of Kenny et al. (US 6,009,129) describes a similar method but fails to disclose wherein measuring that at least one signal quality parameter includes determining whether a DC voltage level of an automatic gain control signal (AGC2) has a first value indicating that the automatic gain control system is inactive, or has a value within a predetermined range indicating

that the automatic gain control system is active. This distinct feature has been added to claim 6 thus rendering claim 6 allowable.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sakai et al. (US 4,654,884) discloses a radio receiver with switching circuit for elimination of intermodulation interference.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SIU M. LEE whose telephone number is (571)270-1083. The examiner can normally be reached on Mon-Fri, 7:30-4:00 with every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh Fan can be reached on (571) 272-3042. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Siu M Lee/
Examiner, Art Unit 2611
3/30/2009

/Chieh M Fan/
Supervisory Patent Examiner, Art Unit 2611